

## REMARKS

### *The Present Invention*

The present invention relates to a cerium oxide particulate composition and a process for preparing the same.

### *Summary of the Office Action*

The Office Action repeats the restriction requirement set forth in the previous office action and withdraws claims 1-33 and 53-55, which are directed to a non-elected invention, from further consideration. Claims 34, 39-44, and 49-52 have been rejected as allegedly lacking novelty under 35 U.S.C. § 102(b) over M. Vallet-Regi et al., "Synthesis and Characterization of CeO<sub>2</sub> Obtained by Spray Pyrolysis Method," *Materials Science Forum*, Vols. 235-238, pages 291-296 (1997) (hereinafter "the Vallet-Regi article"). Claims 34-52 have also been rejected as allegedly lacking novelty under 35 U.S.C. § 102(b) over U.S. Patent 4,713,233 (Marsh et al.) (hereinafter "the Marsh '233 patent").

### *Discussion of the Amendments*

Claims 1-33 and 53-55 have been cancelled, without prejudice or disclaimer of the subject matter recited therein, as being directed to a nonelected invention. Claim 34 has been amended to incorporate the subject matter of claim 35, which claim has been cancelled. This amendment is supported by the claims as originally filed and the specification, for example, at page 6, lines 7-19. Claims 36 and 46 have been amended to correct their dependency in view of the cancellation of claim 35. Claim 51 has been amended to correct a typographical error. No new matter has been added by way of these amendments.

### *Discussion of the Anticipation Rejections*

The Office Action rejects claims 34-52 as allegedly lacking novelty under 35 U.S.C. § 102(b) over the Vallet-Regi article or the Marsh '233 patent. In particular, the Office Action asserts that the Vallet-Regi article discloses hollow cerium oxide particles which are spherical in shape and are comprised of cerium oxide crystallites having a size of about 50-100 Å. The Office Action also asserts that the Marsh '233 patent discloses cerium oxide particles comprising loosely agglomerated primary particles and/or aggregates of primary particles having a spherical form at the aggregate and primary particle level. Applicants respectfully traverse these rejections.

Contrary to the Office Action's assertions, neither the Vallet-Regi article nor the Marsh '233 patent discloses or suggests all of the elements recited in the pending claims. The pending claims recite a cerium oxide particle composition comprising aggregates

consisting essentially of approximately spherical primary particles of cerium oxide, wherein the aggregates comprise a mixture of cenospherical and aciniform aggregates. As acknowledged in the Office Action, the Vallet-Regi article fails to disclose or suggest a cerium oxide particle composition comprising a mixture of cenospherical and aciniform aggregates. Indeed, as can be seen from the SEM micrographs, all of the aggregates of the cerium oxide composition disclosed in the Vallet-Regi article are roughly spherical in shape (see, for example, Figures 1a and 1b).

Furthermore, the Marsh '233 patent fails to disclose or suggest a cerium oxide particle composition comprising a mixture of cenospherical and aciniform aggregates. The Marsh '233 patent discloses inorganic metal oxide compositions consisting of loosely agglomerated primary particles and/or aggregates of primary particles having a generally spherical form at the aggregate and primary particle level. While the Marsh '233 patent discloses a particle composition comprising *agglomerates* of two or more primary particles, the Marsh '233 patent does not teach or suggest that the primary particles are agglomerated to such a degree that the resulting *agglomerate* particle has a three-dimensional, chain-like structure. Moreover, the portion of the Marsh '233 patent cited by the Office Action is referring to *agglomerates*, as opposed to the *aggregates* recited in the pending claims. As stated in the Marsh '233 patent, the term *agglomerates* is used to refer to a collection of primary particles or aggregates that are held together by relatively weak cohesive forces (see, for example, the Marsh '233 patent at col. 6, lines 48-51). By way of contrast, the pending claims require that the cerium oxide particulate composition comprise aciniform *aggregates*. These aggregates are a dense mass of primary particles that are held together by relatively strong cohesive forces (see, for example, the Marsh '233 patent at col. 6, lines 54-57, and the present specification at page 7, lines 7-8). Thus, the portion of the Marsh '233 patent relied upon by the Office Action actually is describing particle *agglomerates* that are significantly different in structure than the aciniform *aggregates* recited in the pending claims. Accordingly, the Marsh '233 patent fails to disclose or suggest a cerium oxide particulate composition comprising aciniform *aggregates* as required by the pending claims.

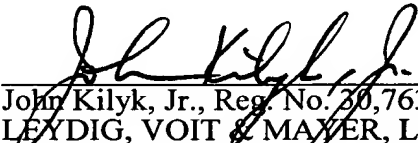
For the foregoing reasons, the cited references fail to disclose or suggest all of the elements recited in the pending claims. The Section 102(b) rejections over the Vallet-Regi article and the Marsh '233 patent, therefore, should be withdrawn.

In re Appln. of Hung et al.  
Application No. 09/715,634

*Conclusion*

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

  
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